IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Gerhard Eser et al.
Serial No.:	10/553,379
Date Filed:	October 18, 2005
Group Art Unit:	3747
Confirmation No.:	3677
Examiner:	Coleman, Keith A.
Title:	**METHOD FOR CONTROLLING A FUEL PRESSURE IN A FUEL SUPPLY DEVICE OF A COMBUSTION ENGINE**

MAIL STOP - AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

This Application has been reviewed in light of the Final Office Action dated July 22, 2010 and the Advisory Action dated October 7, 2010. All pending Claims 10, 12-17, 19-23 and 25-29 were rejected in the Final Office Action, and the rejections were maintained in the Advisory Action. Claims 2, 7 and 13-14 were previously cancelled. No claim amendments are hereby requested. This Request is being filed concurrently with a Notice of Appeal.

The Examiner's rejections contain clear factual errors and legal deficiencies.

Claims 10, 12-17, 19-23, and 25-29 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Amann* (U.S. 5,345,916) in view of *Oono* (U.S. 6,889,666).

Applicants submit that the proposed combination of *Amann* with *Oono,* even if proper (which Applicants do not concede), does not render Applicants' claims obvious. In particular, *Amann* does not teach anything remotely similar to the various limitations of Applicants' claims for which it has been cited by the Examiner, as discussed below.

For example, regarding Claim 10, the Examiner alleges in the Final Office Action that *Amann* teaches all limitations "except positively disclosing the fuel pressure is sensed by the fuel sensor," which the Examiner alleges is taught by *Oono*. Applicants disagree. *Amann* does not teach ***any*** of these limitations for which it has been cited, as explained below.

- **The Examiner has failed to *allege*, much less *prove*, that *Amann* teaches "calculating an actual fuel pressure gradient from at least two consecutive actual fuel pressure values from said fuel pressure sensor."**

Regarding this limitation, the Examiner argued in the Final Office Action: "Figure 6 [of Amann] shows pumping rate measured in mm3/degree and fuel pressure pulses." (Final Office Action, page 3). Figure 6 clearly does not show ***calculating*** any gradient at all, much ***calculating a fuel pressure gradient*** from multiple ***fuel pressure values***. Figure 6 shows a **fuel pumping rate** (mm3/degree) as a function of degrees of pumping, along with five sample "**pulse wave form curves** W-1 through W-5" that show the **injector needle lift**. (col. 7, lines 1-14). Neither the main graph, nor the five "pulse wave form curves" shown in Figure 6 indicate any ***pressure*** values or ***pressure*** gradients at all. Pressure is simply not shown in the graphs of Figure 6. Further, Figure 6 does not show ***calculating*** a pressure gradient, and certainly not ***calculating*** an actual pressure gradient based on multiple ***actual fuel pressure values***. In fact, the Examiner acknowledges that *Amann* does not determine actual fuel pressure values, but alleges that *Oono* does. Thus, Figure 6 of *Amann* cannot possibly teach ***calculating*** an ***actual pressure gradient*** based on multiple ***actual fuel pressure values***.

The Examiner also added in the Final Office Action: "Note: Applicant has defined 'gradient' as a change in pressure values as discussed in Paragraph 24. As such, Amann et al. clearly monitors the flow rates as shown in Figures 5 and 6 and discussed on Col. 5, Lines 15-20." (Office Action, pages 3-4). Applicants explained that this argument by the Examiner that *Amann* "clearly monitors the ***flow rates***" -- whether or not it is correct -- **fails to even allege**, much less prove, that *Amann* teaches ***calculating*** any gradient, much less calculating an ***actual pressure gradient*** based on multiple ***actual fuel pressure values***. Monitoring *flow rates* and calculating a *pressure gradient* obviously cannot be equated.

In response, the Examiner then tried a new argument in the Advisory Action: "In Applicants specification, Applicant has defined 'gradient' as a change in 'pressure values'. Figure 6 as stead on Col. 7, Lines 10-15 discloses pulse waves correlated with the pumping rate of the fuel pump. As stated earlier in the reference, pulses waves are 'shaped pressure waves' or changes in pressure which the reference discusses as shaping them on Col. 5, lines 35-40. As such, the pressure gradients are the shaped pressure waves."

Once again, the Examiner **has failed to even allege**, much less prove, that *Amann* teaches ***calculating*** any gradient, much less calculating an ***actual pressure gradient*** based on multiple ***actual fuel pressure values***. Even if the alleged shaped pressure waves taught by *Amann* could be equated with the recited "fuel pressure gradient" (which Applicants do not concede), the Examiner does not even allege that *Amann* teaches ***calculating*** the shaped pressure waves, much less ***calculating*** the shaped pressure waves based on multiple ***actual fuel pressure values***.

Accordingly, for the reasons discussed above, the Examiner has failed to *allege*, much less *prove*, that *Amann* teaches "calculating an actual fuel pressure gradient from at least two consecutive actual fuel pressure values from said fuel pressure sensor."

- **The Examiner has failed to *allege*, much less *prove*, that *Amann* teaches "comparing the calculated actual fuel pressure gradient to a specified threshold gradient value"**

The Examiner's only reference to this limitation in the Final Office Action was simply "See Figure 5A and 5B." (Office Action, page 3). In response, Applicants explained that Figures 5A and 5B cannot possibly show ***comparing a calculated gradient with a threshold gradient value***, much less comparing a calculated actual fuel pressure gradient (which *Amann* does not teach, as discussed above) with a specified threshold gradient value. Like Figure 6 discussed above, Figures 5A and 5B do not show a ***pressure gradient***. Figure 5A is a plot of fuel flow quantity versus cam angle, and Figure 5B is a plot of pumping rate versus cam angle. Neither graph indicates ***pressure*** or a ***pressure*** gradient. Moreover, neither plot indicates comparing a calculated gradient with a threshold gradient. There is nothing in either graph that could be equated with a **threshold gradient**. Further, there is nothing in either graph that shows **comparing a gradient with anything**, much less a comparing a calculated gradient with a threshold gradient.

In response to Applicants' argument above, the Examiner then tried a new argument in the Advisory Action: "As stated on Col. 5, Lines 65-68, the microprocessor modifies the desired quantity of fuel via changing the desire fuel shape pulse or fuel gradient as stated on Col. 6, Lines 60-68. Points A, B, C, and D show the differences in cam profiles to obtain the

desired fuel quantity. Figure 5B and 5D shown the changes in the actual shape pulse/gradient to the desired shape pulse/gradient to optimize engine performance."

The Examiner's argument is a non-sequitur. Even if the everything the Examiner claims is true, and assuming that *Amann*'s shaped pressure waves can be equated with the recited "fuel pressure gradient" (which Applicants do not concede), there is still **no allegation**, much less proof, of any teaching of a ***comparison* of a fuel pressure gradient** to a specified threshold gradient value. The Examiner makes no allegation that modifying the desired quantity of fuel by changing the desired fuel shape pulse (as allegedly taught by *Amann*) includes the step of **comparing any of the fuel shape pulses to anything**, much less comparing the fuel shape pulses to a "**specified threshold gradient value**." In fact, the Examiner does not even allege anything in *Amann* that could be equated with the recited "specified threshold gradient value."

Accordingly, for the reasons discussed above, the Examiner has failed to *allege*, much less *prove*, that *Amann* teaches "comparing the calculated actual fuel pressure gradient to a specified threshold gradient value."

- ***Amann* fails to teach "if the calculated actual fuel pressure gradient is above the specified threshold gradient value then determining an actuating signal as a function of the desired fuel pressure value and the calculated actual fuel pressure gradient."**

The Examiner alleged in the Final Office Action that this limitation is taught at Col. 4, Lines 30-45 of *Amann* (Final OA, page 3). Applicants respectfully submit that this passage does not teach anything similar. Col. 4, Lines 30-45 of *Amann* teaches that an actuating signal for controlling a cam angle (by controlling a solenoid) is determined based on (a) the cam angle at the start of injection and (b) the quantity of fuel to be injected. Applicants do not understand how this can possibly be equated with determining an actuating signal based on (a) a desired fuel pressure value and (b) a calculated actual fuel pressure gradient. However, determining a signal based on a **cam angle** and a **desired fuel injection quantity** is obviously not the same, or even remotely similar, to determining a signal based on a **desired fuel pressure value** and a **calculated actual fuel pressure gradient**. Further, the cited passage does not teach that the solenoid-actuating signal is determined "if [a] calculated actual fuel pressure gradient is above [a] specified threshold gradient value," as recited in

Claim 10. Thus, the cited passage fails to teach a **desired fuel pressure value**, much less a **calculated actual fuel pressure gradient**, much less determining an actuating signal based on both of these particular inputs, much less determining such an actuating signal if a calculated actual fuel pressure gradient is above a specified threshold gradient value." In fact, the cited passage of *Amann* does not teach anything similar to any of these limitations.

Thus, for at least the various reasons set forth above, Applicants submit that Claim 10 is allowable over *Amann* and *Oono*. Accordingly, Applicants respectfully request allowance of Claim 10, as well as all dependent claims. For analogous reasons, Applicants respectfully request allowance of independent Claims 12 and 25, as well as all dependent claims.

CONCLUSION

Applicants submit this Argument in Support of Pre-Appeal Brief Request for Review along with a Notice of Appeal. Applicants authorize the Commissioner to charge Deposit Account No. 50-4871 in the amount of $540.00 for the Notice of Appeal fee. The Commissioner is also authorized to charge any additional fees necessary or credit any overpayments to Deposit Account No. 50-2148 of King & Spalding L.L.P.

If there are any matters concerning this Application that may be cleared up in a telephone conversation, please contact Applicants' attorney at 512-457-2030.

Respectfully submitted,
KING & SPALDING LLP
Attorney for Applicants

Eric M. Grabski
Registration No. 51, 749

Date: October 22, 2010

SEND CORRESPONDENCE TO:
KING & SPALDING L.L.P.
CUSTOMER ACCOUNT NO. **86528**
512-457-2030
512-457-2100 (fax)